

Name: _____

Test Date: _____

EARTH'S SYSTEMS STUDY GUIDE

1. Identify one characteristic of the different **eras in the history** of the earth:
 - a. Paleozoic Era
 - b. Mesozoic Era
 - c. Cenozoic Era
2. Describe the formation and layout of **stratigraphic columns**:
3. Identify the most abundant element in the Earth's crust: _____ 2nd: _____
4. Identify how **rock types** form and give an example of each:
 - a. **Igneous**
 - b. **Metamorphic**
 - c. **Sedimentary**
5. Describe the relationship between the **lithosphere**, **tectonic plates**, and the **asthenosphere**:
6. Describe the THREE types of **plate movement** (use pictures):
 - a. **Divergent**
 - b. **Sea floor spreading**
 - c. **Convergent**
 - d. **Transform**
7. Identify FOUR types of **volcanoes** and give an example of each:
8. Use the map to identify hotspots and important tectonic plate movement.
9. Describe the basic purpose of the **rock cycle**:

10. Define: **Weathering**

Erosion

Deposition

11. Identify THREE mineral particles that are used to make **soil texture**:

a. **Sand**

b. **Silt**

c. **Clay**

12. Identify the importance of **loam**:

13. Use a soil triangle to identify the following soil types:

[Clay 30%, Silt 20%, Sand 50%: _____] [Clay 20%, Silt 60%, Sand 20%: _____]

14. Identify TWO characteristics of the **soil horizons**:

a. **O horizon**

b. **A horizon**

c. **B horizon**

d. **C horizon**

15. Describe the process of soil formation (include influences in soil development):

16. Identify ONE characteristics of the following **types of soil**:

Desert soil

Tropical soil

Grassland soil

Polar

Forest soil

Swelling soil

17. Identify TWO physical and TWO chemical **soil tests**:

18. **Atmospheric composition**:

Nitrogen _____, Oxygen _____, Water vapor _____, Argon _____, & Carbon dioxide _____

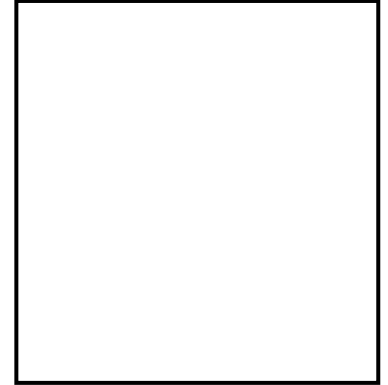
19. Discuss the temperature / pressure change and characteristics of the **layers of the atmosphere**:

a. **Thermosphere**

b. **Mesosphere**

c. **Stratosphere**

d. **Troposphere**



20. Identify the tilt of the Earth: _____

21. Identify how **axial tilt**, **eccentricity**, and **precession** affect climate:

22. Describe the **atmospheric circulation** (use the tricellular model):

23. Describe a **convection cell**:

Use the map to identify the location of the THREE main convection cells

24. Identify the cause of the **Coriolis effect**:

25. Identify how the Coriolis Effect has an impact on a **cyclone**:

26. Identify the difference between **cold fronts** and **warm fronts**:

27. Explain **El Nino Southern Oscillation (ENSO)**

28. Identify the FIVE connections between climate change, El Nino and disease:

29. Identify TWO differences between an **El Nino** year and a **Non-El Nino** year:

30. Describe **thermohaline circulation**:

30. Use the map to identify the location of the Great Pacific Garbage Patch.

31. Describe **upwelling**:

32. Use the map to identify the following global water reserves: Ogallala Aquifer, Amazon River, Ganges, Volga River, Yangtze River, and the Great Lakes.

33. Identify ONE problem with the availability of **potable water**:

34. Identify the process of **desalination** and the importance on areas with low amounts of freshwater:

35. Identify TWO environmental issue with using waterways as highways:

36. Describe the unique issues associated with the **Colorado River system**:

Advantage of river use:

Disadvantage of river use:

37. Identify the main use and the percentage usage of:

____% **Agriculture**:

____% **Industry**:

38. Identify THREE methods of irrigation.

a. _____, b. _____, c. _____

Describe the importance of **drip irrigation**:

39. Identify TWO ways (other than drip irrigation) to conserve water in agriculture:

40. Identify the main use and the percentage usage of:

____% **Cities/residence (Municipalities)**:

Identify ONE way to conserve water in your own home:

41. Describe the **bottled water** industry:

42. Identify the issue with the James Bay project in Quebec:

43. Describe what happened to the **Aral Sea**:

44. Describe the unique issues associated with the **Aswan High dam**:

45. Describe the unique issues associated with the **Three Gorges Dam**:

Advantages:

Disadvantages:

